

IN THE CLAIMS

Claim 1 (currently amended). A hotmelt pressure sensitive adhesive comprising at least one polyacrylate component and an added filler comprising carbonate, wherein said at least one polyacrylate component

- is ~~based, with a mass fraction of at~~ formed from monomers comprising least 50% by weight, ~~on of~~ at least one acrylic ~~and/or~~ methacrylic ester, or both, of the ~~general~~ formula (I)



where $\text{R}_1 = \text{H}$ or CH_3 and R_2 is an unbranched, branched or cyclic alkyl radical having 1 to 22 carbon atoms and

- is substantially free from polar groups.

Claim 2 (currently amended). The adhesive as claimed in claim 1, wherein said at least one polyacrylate component has an average molar ~~mass weight~~ weight M_w of not more than 500 000 g/mol, ~~in particular not more than 450 000 g/mol, especially not more than 400 000 g/mol.~~

Claim 3 (currently amended). The adhesive as claimed in claim 1 ~~or 2~~, wherein the added filler comprising calcium carbonate is chalk.

Claim 4 (currently amended). The adhesive as claimed in ~~any of the preceding claims~~ claim 1, wherein the amount of said added filler comprising calcium carbonate ~~has a mass fraction of~~ is at least 10% wt., ~~in particular at least 15%,~~ based on the weight of polyacrylate component.

Claim 5 (currently amended). The adhesive as claimed in ~~any of the preceding claims, exhibiting~~ claim 1, having a shrinkback₁ after extrusion coating₁ of not more than 5%, ~~in particular not more than 4%, especially not more than 3%.~~

Claim 6 (currently amended). The adhesive as claimed in ~~any of the preceding claims~~ claim 1, wherein said at least one polyacrylate component is substantially free of carboxyl or hydroxyl groups.

Claim 7 (currently amended). The adhesive as claimed in ~~any of the preceding claims~~ claim 1, wherein ~~the group~~ R₂ ~~of the general formula (I)~~ is selected from the group consisting of unbranched, branched, and cyclic C₄ to C₁₄ alkyl radicals, ~~especially C₄ to C₈ alkyl radicals.~~

Claim 8 (currently amended). The adhesive as claimed in ~~any of the preceding claims~~ claim 7, wherein ~~the group~~ R₂ ~~of the general formula (I)~~ is selected from the group consisting of bridged or unbridged, alkylated or unalkylated cycloalkyl radicals having at least 6 carbon atoms.

Claim 9 (currently amended). The adhesive as claimed in ~~either of claims 7 or 8, wherein~~ the at least one acrylic and/or methacrylic ester of ~~the general~~ formula (I) is selected from the ~~following group, group~~ consisting of methyl acrylate, methyl methacrylate, ethyl acrylate, n-butyl acrylate, n-butyl methacrylate, n-pentyl acrylate, n-hexyl acrylate, n-heptyl acrylate, n-octyl acrylate, n-octyl methacrylate, n-nonyl acrylate, lauryl acrylate, stearyl acrylate, behenyl acrylate, isobutyl acrylate, 2-ethylhexyl acrylate, 2-ethylhexyl methacrylate, isooctyl acrylate, isooctyl methacrylate, cyclohexyl

methacrylate, isobornyl acrylate, isobornyl methacrylate, and 3,5-dimethyladamantyl acrylate.

Claim 10 (currently amended). The adhesive as claimed in claim 1 ~~any of the preceding claims~~, wherein said monomers further comprise at least one polyacrylate component is based on at least one comonomer ~~as well as on~~ in addition to said at least one acrylic and/or methacrylic ester.

Claim 11 (currently amended). The adhesive as claimed in claim 10, wherein the at least one comonomer is a compound selected from the group consisting of ~~the~~ N-alkyl-substituted amides, ~~especially from the group containing N,N-dimethylacrylamide, N,N-dimethylmethacrylamide, N-tert-butylacrylamide, N-vinylpyrrolidone, N-vinyl lactam, dimethylaminoethyl acrylate, dimethylaminoethyl methacrylate, diethylaminoethyl acrylate, diethylaminoethyl methacrylate, N-(butoxymethyl) methacrylamide, N-(ethoxymethyl) acrylamide, and N-isopropylacrylamide.~~

Claim 12 (currently amended). The adhesive as claimed in ~~either of claims claim 10 and 11~~, wherein the at least one comonomer is a compound selected from the group containing maleic anhydride, itaconic anhydride, glyceridyl methacrylate, phenoxyethyl acrylate, phenoxyethyl methacrylate, 2-butoxyethyl acrylate, 2-butoxyethyl methacrylate, cyanoethyl acrylate, cyanoethyl methacrylate, glyceryl methacrylate, and tetrahydrofurfuryl acrylate.

Claim 13 (currently amended). The adhesive as claimed in claim 10 ~~or 11~~, wherein the at least one comonomer is a compound selected from the group ~~containing~~ consisting of vinyl esters, vinyl ethers, vinyl halides,

vinylidene halides, vinyl compounds having aromatic rings or heterocycles in α -position, especially containing vinyl acetate, vinyl formamide, vinyl pyridine, ethyl vinyl ether, vinyl chloride, vinylidene chloride, and acrylonitrile.

Claim 14 (currently amended). The adhesive as claimed in claim 10 ~~or 11~~, wherein the at least one comonomer is a photoinitiator having a copolymerizable double bond, ~~especially Norrish I or Norrish II photoinitiators, benzoin acrylates or acrylated benzophenones.~~

Claim 15 (currently amended). The adhesive as claimed in ~~any of the preceding claims 10 to 14~~ claim 10, wherein at least one vinyl aromatic compound ~~further component having a high static glass transition temperature~~ is added to the at least one comonomer, ~~in particular an aromatic vinyl compound, preferably a C₄ to C₁₈ aromatic or heteroaromatic.~~

Claim 16 (currently amended). The adhesive as claimed in ~~any of the preceding claims, which is admixed with~~ claim 1, further comprising at least one resin component ~~in particular~~ selected from the group ~~containing~~ consisting of pinene resins, indene resins, and rosins, ~~or and~~ their derivatives ~~or and~~ salts; aliphatic, aromatic ~~or and~~ alkylaromatic hydrocarbon resins, ~~especially C₅ to C₈ hydrocarbon resins;~~ hydrogenated hydrocarbon resins; substituted ~~or and~~ unsubstituted hydrocarbon resins, natural resins, terpene resins, and terpene-phenolic resins.

Claim 17 (currently amended). The adhesive as claimed in ~~any of the preceding claims, to which further additives are added, especially~~

claim 1, further comprising one or more additives selected from the group consisting of plasticizers, nucleators, expandants, compounding agents, aging inhibitors, crosslinkers and/or promoters.

Claim 18 (currently amended). A process for preparing a the hotmelt pressure sensitive adhesive ~~as claimed in any of claims 1 to 17, where~~ of claim 1, which comprises

- (a) at least ~~one polyacrylate component is prepared by at least partial~~ partially polymerization of polymerizing at least one acrylic and/or methacrylic ester of the ~~general~~ formula (I)

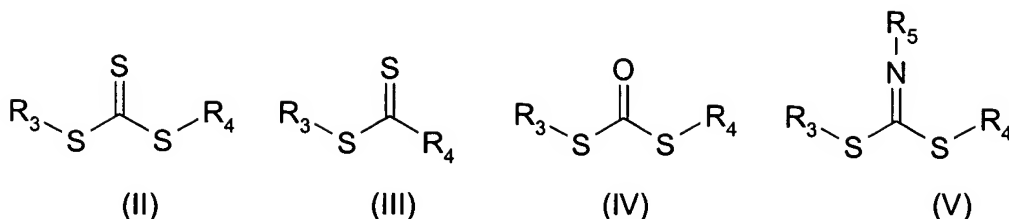


where R_1 is H or CH_3 and R_2 is an unbranched, branched or cyclic C_1 to C_{22} alkyl radical, optionally in the presence ~~where appropriate~~ of at least one comonomer, to prepare a polyacrylate component, and

- (b) ~~before or after the copolymerization~~ adding a filler comprising calcium carbonate ~~is admixed to the polymerization media before or after the~~ polymerization .

Claim 19 (original). The process as claimed in claim 18, wherein the polymerization is conducted in solution or without solvent.

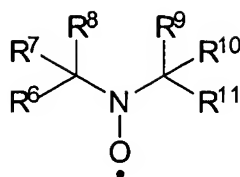
Claim 20 (currently amended). The process as claimed in claim 18 or 19, **wherein** the polymerization is conducted in the presence of at least one control reagent of the ~~general~~ formula (II), (III), (IV) and/or (V)



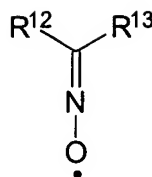
in which R₃, R₄, and R₅ independently of one another or identically are ~~chosen~~
selected from the group consisting of

- branched and unbranched C₁ to C₁₈ alkyl radicals; C₃ to C₁₈ alkenyl radicals; C₃ to C₁₈ alkynyl radicals;
- C₁ to C₁₈ alkoxy radicals;
- C₃ to C₁₈ alkynyl radicals; C₃ to C₁₈ alkenyl radicals; C₁ to C₁₈ alkyl radicals substituted by at least one OH group or a halogen atom or a silyl ether;
- C₂-C₁₈ heteroalkyl radicals having at least one O atom and/or one NR* group in the carbon chain, R* being ~~any~~ an organic radical (~~particularly an organic radical~~);
- C₃-C₁₈ alkynyl radicals, C₃-C₁₈ alkenyl radicals, C₁-C₁₈ alkyl radicals substituted by at least one ester group, amine group, carbonate group, cyano group, isocyano group and/or epoxy group and/or by sulfur;
- C₃-C₁₂ cycloalkyl radicals;
- C₆-C₁₈ aryl or benzyl radicals;
- hydrogen.

Claim 21 (currently amended). The process as claimed in claim 18 or 19, wherein the polymerization is conducted in the presence of at least one control reagent of the general formula (VI) and/or (VII)



(VI)



(VII)

where R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} , R^{12} , and R^{13} independently of one another denote ~~the following compounds or atoms:~~

- i) halides, ~~such as chlorine, bromine or iodine, for example~~
- ii) linear, branched, cyclic, and heterocyclic heterocarbons having 1 to 20 carbon atoms, which ~~may be~~ are optionally saturated, unsaturated or aromatic,
- iii) esters $-\text{COOR}^{14}$, alkoxides $-\text{OR}^{15}$ and/or phosphonates $-\text{PO}(\text{OR}^{16})_2$,
where R^{14} , R^{15} or R^{16} stand for radicals from group ii).

Claim 22 (currently amended). ~~The use of a hotmelt pressure sensitive adhesive as claimed in any of claims 1 to 17 for producing a~~ A pressure sensitive adhesive tape comprising a backing material which is impregnated by a flame retardant and coated on one or both sides with ~~said the~~ the adhesive of claim 1.

Claim 23 (currently amended). The ~~use~~ pressure-sensitive adhesive tape as claimed in claim ~~11~~ 22, wherein the backing material used is a nonwoven, ~~in particular a PET nonwoven~~, a woven-nonwoven composite or a woven fabric.

Claim 24 (currently amended). The ~~use~~ pressure-sensitive adhesive tape as claimed in claim 22 or 23, wherein the backing material is coated with the hotmelt pressure sensitive adhesive from the melt by a hotmelt process, ~~in particular by roll coating, in a melt die process or by extrusion coating.~~

Claim 25 (currently amended). The ~~use~~ pressure-sensitive adhesive tape as claimed in ~~any of claims 22 to 24~~ claim 22 or 23, wherein following its application to the backing material the hotmelt pressure sensitive adhesive is crosslinked, ~~in particular with UV radiation and/or with electron beams and/or by means of other high-energy irradiation.~~

Claim 26 (new). The pressure-sensitive adhesive tape of claim 24, wherein said hotmelt process is roll coating, a melt die process or extrusion coating.

Claim 27 (new). The pressure-sensitive adhesive tape of claim 25, wherein said crosslinking is by UV irradiation, electron beam irradiation, another form of high-energy irradiation, or any combination thereof.

Claim 28 (new). The pressure-sensitive adhesive tape of claim 14, wherein said photoinitiator having a copolymerizable double bond is selected from the group consisting of Norrish I and Norrish II photoinitiators, benzoin acrylates and acrylated benzophenones.

Claim 29 (new). The pressure-sensitive adhesive tape of claim 25, wherein
said adhesive is crosslinked by UV radiation and/or electron beams and/or
any other high-energy irradiation